

Name _____

Date _____ Block _____

Sequences and Equations

1. These dot diagrams show the beginning of a sequence of patterns:

$n = 1$	$n = 2$	$n = 3$	$n = 4$	$n = 5$

- (a) Draw the fifth pattern in the sequence in the space above.
- (b) How many dots of each color will there be in the 10th pattern? White: Black:
- (c) The number of black dots in the n th diagram is given by the expression: $n + 1$.
Write algebraic expressions for the number of white dots and for the total number of dots:

Number of white dots	Number of black dots	Total number of dots
.....	$n + 1$	=

2. These dot diagrams show the beginning of another sequence of patterns:

$n = 1$	$n = 2$	$n = 3$	$n = 4$

- (a) Complete the equation below with algebraic expressions for the number of white dots, number of black dots, and total number of dots:

Number of white dots	Number of black dots	Total number of dots
.....	=

- (b) Rewrite the expression for the total in its simplest, factorized form, if you haven't done so already.


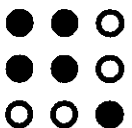
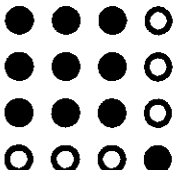
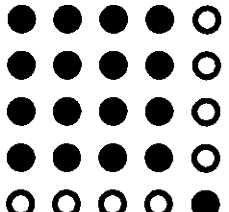


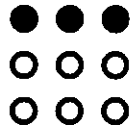
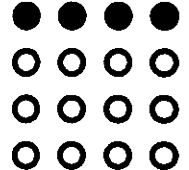

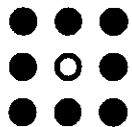
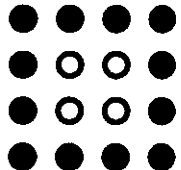
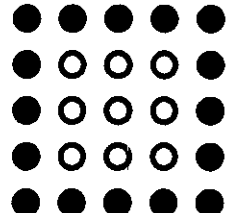


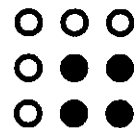
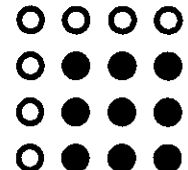
.....


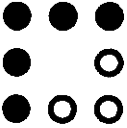
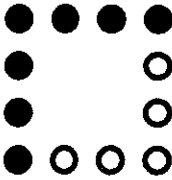
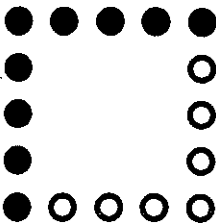


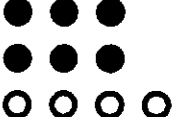
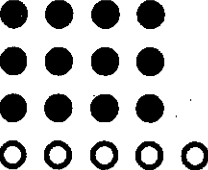

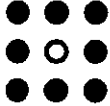
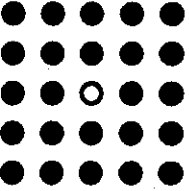
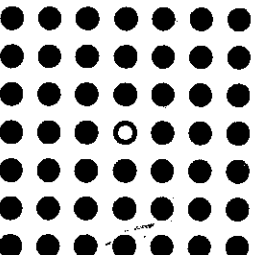


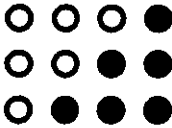
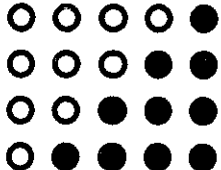
.....

Card Set: Adding Polynomials

1	White		Black		Total
		+		=	$4n$
2	White		Black		Total
		+		=	$n(n+1)$
3	White		Black		Total
		+		=	n^2
4	White		Black		Total
		+		=	$n^2 + 1$
5	White		Black		Total
		+		=	$(n+1)^2$
6	White		Black		Total
	$n(n-1)$	+		=	
7	White		Black		Total
		+	$4n$	=	
8	White		Black		Total
		+		=	$(2n-1)^2$
9	White		Black		Total
		+	$\frac{n(n-1)}{2}$	=	n^2

Card Set: Sequences of Dots

A	$n = 1$	$n = 2$	$n = 3$	$n = 4$
				
B	$n = 1$	$n = 2$	$n = 3$	$n = 4$
				
C	$n = 1$	$n = 2$	$n = 3$	$n = 4$
				
D	$n = 1$	$n = 2$	$n = 3$	$n = 4$
				

E	$n = 1$	$n = 2$	$n = 3$	$n = 4$
				
F	$n = 1$	$n = 2$	$n = 3$	$n = 4$
				
G	$n = 1$	$n = 2$	$n = 3$	$n = 4$
				
H	$n = 1$	$n = 2$	$n = 3$	$n = 4$
				
I	$n = 1$	$n = 2$	$n = 3$	$n = 4$
	